IN THE CLAIMS:

Please amend claims 1, 3-4, 11-12 and 14 as follows:

1. (Currently Amended) A method of analysis of DNA sequence, comprising the steps of:

pretreating a solution containing a nucleic acid substrate for a complementary strand extension reaction by degrading, [[by]] using pyrophosphatase, pyrophosphoric acid contained in the solution ~~a reagent used for extension reaction of a DNA primer hybridized to a target nucleic acid through a complementary binding~~, and/or degrading, [[by]] using apyrase, adenosine 5'–triphosphate contained in ~~the reagent~~ the solution;

removing or inactivating the pyrophosphatase and/or the apyrase in ~~the reagent~~ the solution after the ~~degrading~~ pretreating step[[.]];

mixing the solution with a DNA primer, a target nucleic acid and a reagent for the extension reaction on the DNA primer after the step of removing or inactivating;

conducting [[an]] the extension reaction on the DNA primer hybridized to the target nucleic acid; and

detecting pyrophosphoric acid generated by the extension reaction after the removing or inactivating step.

2. (Currently Amended) A method of analysis of DNA sequence according to Claim 1, wherein the ~~pyrophosphates~~ pyrophosphatase and/or the apyrase is immobilized on a solid.

3. (Currently Amended) A method of analysis of DNA sequence, comprising steps of:

adding ~~pyrophosphates~~ pyrophosphatase and/or apyrase to one or more solutions each containing a different deoxynucleotide, or an analogue of the deoxynucleotide and then thereby degrading pyrophosphoric acid or adenosine 5'–triphosphate, respectively, contained in the solutions;

removing or inactivating the pyrophosphates and/or the apyrase in the solution after the step of degrading after the adding step;

mixing the one or more solutions, a DNA primer, a target nucleic acid and a reagent for extension reaction of the DNA primer after the step of removing or inactivating; and

extending [[a]] the DNA primer hybridized to [[a]] the target nucleic acid ~~via a complementary binding~~, by using DNA polymerase and at least one of the solutions; and

detecting pyrophosphoric acid generated during an extension reaction by chemiluminescence-reaction after the removing or inactivating step.

4. (Currently Amended) A method of analysis of DNA sequence comprising steps of:

adding ~~pyrophosphates~~ pyrophosphatase to one or more solutions each containing a different deoxynucleotide, or an analogue of the deoxynucleotide and then thereby degrading pyrophosphoric acid contained in the solutions;

removing or inactivating the pyrophosphates ~~and/or the apyrase~~ in the solutions after the step of degrading after the adding step;

mixing the one or more solutions, a DNA primer, a target nucleic acid and a reagent for an extension reaction of the DNA primer after the step of removing or inactivating the pyrophosphatase;

extending [[a]] the DNA primer hybridized to [[a]] the target nucleic acid ~~via a complementary binding~~, by using DNA polymerase and at least one of the solutions and converting pyrophosphoric acid, generated during the extension reaction, into adenosine 5'–triphosphate in presence of adenosine 5'-phosphosulfate and ATP ~~sulfrylase~~ sulfurylase; and

detecting luminescence caused by chemiluminescence-reaction using the adenosine 5'-triphosphate, a luminescence-enzyme and a luminescence substrate after the removing or inactivating step.

5. (Cancelled)

6. (Currently Amended) A method of analysis of DNA sequence according to Claim 4, wherein the step of adding the ~~pyrophosphates~~ pyrophosphatase compromises a step of adding the ~~pyrophosphates~~ pyrophosphatase to at least one of the solutions containing the DNA-primer, the DNA-polymerase, the luminescence-enzyme, the luminescence-substrate, the adenosine 5' – phosphosulfate, or the ATP-sulfurylase, thereby degrading the pyrophosphoric acid contained therein, and/or adding apyrase to degrade at least one of the solutions containing the adenosine 5' – phosphosulfate.

7. (Currently Amended) A method of analysis of DNA sequence according to Claim 6, further comprising a step of removing or inactivating the ~~pyrophosphates~~ pyrophosphatase and/or the apyrase added in said at least one of the solutions.

8. (Currently Amended) A method of analysis of DNA sequence according to Claim 7, wherein the ~~pyrophosphates~~ pyrophosphatase and/or the apyrase is immobilized on a solid.

9. (Previously Presented) A method of analysis of DNA sequence according to Claim 4, wherein a base at the 3' terminus of the primer is complementary to one base located next to a single nucleotide polymorphism at one side of a 3' terminus in the target nucleic acid.

10. (Previously Presented) A method of analysis of DNA sequence according to Claim 4, wherein a second or third base from the 3' terminus of the DNA primer is substituted with a base not complementary to one base sequence of the target nucleic acid.

11. (Currently Amended) A method of analysis of DNA sequence, comprising steps of:

a first step of adding ~~pyrophosphates~~ pyrophosphatase to each of a solution containing deoxyadenosine 5'-α-thiotriphosphate, a solution containing deoxythymidine 5'-triphosphate, a solution containing deoxyguanosine 5'-

triphosphate and a solution containing deoxycytidine 5'-triphosphate, and then thereby degrading pyrophosphoric acid contained in each of the solutions;

a second step of removing or inactivating the ~~pyrophosphate~~ pyrophosphatase in each of the solutions after the first step;

a third step of mixing the one or more solutions, a DNA primer, a target nucleic acid and a reagent for extension reaction of the DNA primer after the second step;

a [[third]] fourth step of extending [[a]] the DNA primer hybridized to [[a]] the target nucleic acid ~~via a complementary binding~~, by using DNA polymerase and at least one of the solutions obtained in said second step, converting pyrophosphoric acid generated during the extension reaction into adenosine 5'-triphosphate in presence of adenosine 5' phosphosulfate and ATP sulfurylase; and

a [[forth]] fifth step of detecting luminescence caused by chemiluminescence-reaction using the adenosine 5' triphosphate, lusiferase and luciferin after the second step.

12. (Currently Amended) A method of analysis of DNA sequence, comprising steps of:

a first step of adding ~~pyrophosphates~~ pyrophosphatase to a solution containing deoxyadenosine 5'-α-thiotriphosphate, deoxythymidine 5'-triphosphate, deoxyguanosine 5'-triphosphate and deoxycytidine 5'-triphosphate, thereby degrading the pyrophosphoric acid contained in the solution;

a second step of removing or inactivating the ~~pyrophosphates~~ pyrophosphatase in each of the solutions after the first step;

a third step of mixing the one or more solutions, a DNA primer, a target nucleic acid and a reagent for an extension reaction of the DNA primer after the second step, and

a [[third]] fourth step of extending [[a]] the DNA primer hybridized to [[a]] the target nucleic acid ~~via a complementary binding~~, by using DNA polymerase and at least one of the solutions obtained in said second step, converting pyrophosphoric acid, generated during the extension reaction, into

adenosine 5'-triphosphate in presence of adenosine 5' phosphosulfate and ATP sulfurylase; and

a [[forth]] <u>fifth</u> step of detecting luminescence caused by chemiluminescence-reaction using the adenosine 5' triphosphate, lusiferase and luciferin after the second step.

13. (Previously Presented) A method of analysis of DNA sequence according to Claim 12, wherein a second or third base from the 3' terminus of the DNA primer is substituted with a base not complementary to one base sequence of the target nucleic acid.

14. (Currently Amended) A method of analysis of DNA sequence according to Claim 12, wherein the extension reaction is conducted by repeating hybridization of the DNA primer to the target nucleic acid via degrading <u>an</u> extended [[a]] strand produced in the extension reaction from the 5' terminus of the extended strand, using a 5' -> 3' exonuclease reaction.